HTML, CSS Primer

Frank Walsh
Diarmuid O'Connor

Agenda







HTML

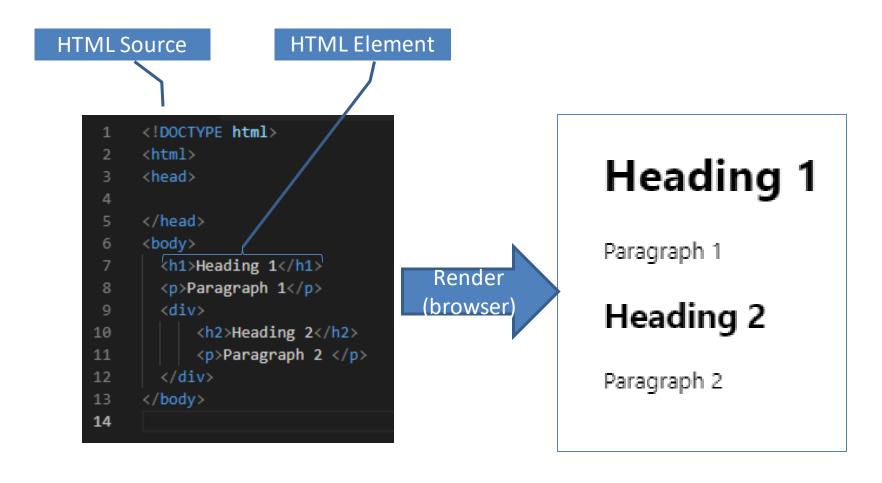
- Mark up Language of the internet.
- Used to structure and present content in the world wide web.
- Designed to support latest multimedia
- Features include:
 - Semantic elements(<nav>, <header>,<footer>...
 - New apis (canvas, geolocation, drag and drop, geolocation...)
- See here for a full description...



HTML Fundamentals: HTML

- HTML tell the browser about the structure of your document
 - where the headings are
 - Where paragraphs are
 - Where text has emphasis
 - Where links are
 - What images are to be displayed
- Using HTML alone, browsers have default rules on how to display each element
- Information is conveyed using "tags" or "elements".

HTML Fundamentals: Document



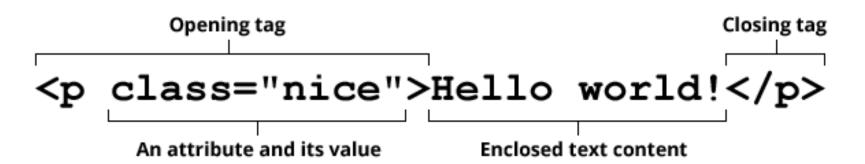
HTML Fundamentals: Elements

```
<html>
<head>
<title>
<body>
 <h1>
 < h2 >
<em>
 <a>
```

- Grouped by purpose:
 - Structural
 - <html>, <head>, <title>, <body>
 - Text
 - Heading
 - <h1>, <h2>
 - Text
 - ,
 - Hypertext
 - <a>>
 - Image
 -
 - Style
 - <style>

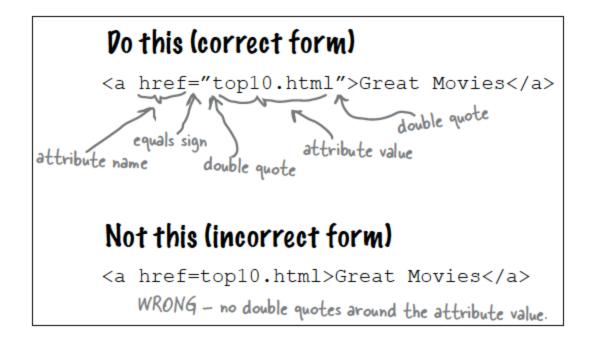
HTML Fundamentals: Anatomy of a HTML Element

Anatomy of an HTML element



HTML Fundamentals: Attributes

Attributes let you specify additional information about an element.



HTML Elements: div

- div> Tag
 - defines a division or a section in an HTML document
 - often used to group elements to format them with CSS
 - Used extensively in front-end Javascript and CSS frameworks (e.g. React and Bootstrap)

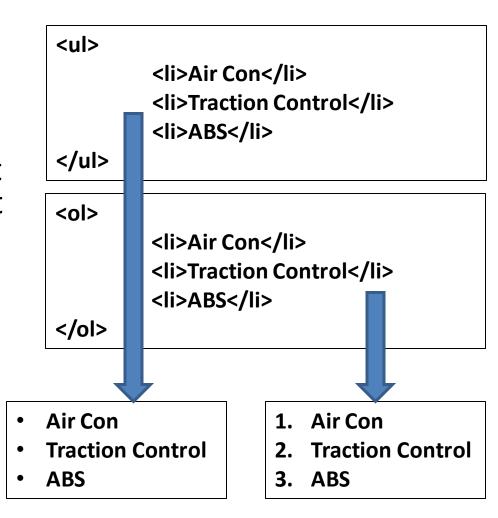
HTML Elements: List

 Used to group a collection of items together in a list, but in a way that doesn't suggest an order of precedence or importance.

Same as

 except

 bullets replaced by numbers



HTML Elements: script

- <script> tag:
 - used to define a client-side script (JavaScript)
 - either contains scripting statements, or it points to an external script file through the src attribute.
- Use the script tag to pull in client side js frameworks
 - Jquery, React...



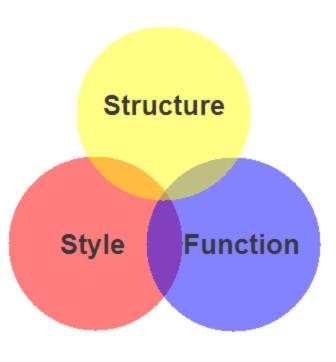
CSS

Markup, Style, Function

- Markup (HTML)
 - Structure
 - Content
- Style (CSS)
 - Style
 - Presentation
 - Appearance
- Function (Javascript)
 - Actions
 - Manipulations

Content is the information the authors wish to convey. HTML markup defines structure.

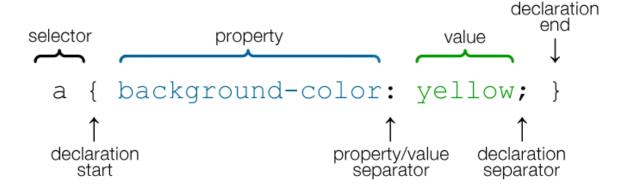
Defines how content will appear when document is accessed.



Defines behaviour – how real-time user interactions are handled.

CSS Advantages

- CSS provides superior control over presentation than do presentational element types in HTML.
- The separation of content from presentation makes it easier for site owners to reuse the content for other purposes, such as RSS feeds or text-to-speech conversion.



CSS Example

```
# style.css x

1  h1 {
2     color: □blue;
3     background-color: □yellow;
4     border: 1px solid □black;
5  }
6
7  p {
8     color: □red;
9  }
```



```
Heading 1
Paragraph 1
Heading 2
Paragraph 2
```

CSS Rules

- Below example contains 2 rules, one for <h1> elements and one for elements
- Style properties placed between {} braces

```
h'1
    color: blue;
    background-color: yellow;
    border: 1px solid black;
p
    color: red;
```

The Selector: defines what you want to style.
In this case it's the <h1> elements

Defines what properties to style. In this example the text colour is set to blue, the background colour to yellow and border to 1 pixel solid black.

CSS Rules

- You can add as many properties and values as you like in each CSS rule.
- To put a border around your paragraphs:

```
background-color: red;
border: 1px solid gray;

The element
will have a border...

All you have to do is add
another property and value
that is I pixel thick, solid, and gray.
...that is I pixel thick, solid, and gray.
```

How to Use CSS

Inline

```
<span style="font-size: 20px;margin-left: 10px">
```

Style CSS tag(put in <head>)

```
<style>
    h1 {color:red;}
    p {color:blue;}
</style>
```

External CSS file (put in <head>)

```
<link rel="stylesheet" href="style.css"/>
```

CSS file

 Best practice to separate your style out into a css file and link to it in the head element.

Use the link element

to "link in" external
information.

And the style sheet is located
at this href (in this case we're
using a relative link, but it could
be a full-blown URL).

* And the style sheet is located
at this href (in this case we're
using a relative link, but it could
be a full-blown URL).

The rel attribute specifies the relationship between the XHTML file and the thing you're linking to. We're linking to a style sheet, so we use the value "stylesheet".

CSS Rules

Rules can be combined and applied using more than one selector

<h1> and <h2> have identical fontfamily and colour properties...

```
h1 {
font-family: sans-serif;
color: blue;
background-color: yellow;
border: 1px solid black;
}

h2 {font-family :sans-serif;
    color: blue;
}
```

font-family and colour properties can be combined into one rule

```
h1, h2{
font-family: sans-serif;
color: blue;
}

h1 {
background-color: yellow;
border: 1px solid black;
}
```

- Both h1 and h2 have identical font-family and colour properties, but only h1 has a yellow background and solid, black, 1 pixel border
- Both of the above style sheet produce the same result.

CSS Selectors

Class attribute

- While the name of an element specifies its type, the class attribute lets you assign to it one or more subtypes.
- These subtypes may then be used in CSS code for styling purposes.
- In particular, several elements may share a class and only those elements can be identified for restyling

```
<body>
   Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Cras sollicitudin, orci
   nec facilisis vehicula, neque urna porta risus, ut sagittis enim velit at orci.
    class="withstyle">
   Fusce velit. Integer sapien enim, rhoncus vitae, cursus non,
   commodo vitae, felis. Nulla convallis ante sit amet urna. Maecenas condimentum
   hendrerit turpis.
  Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Cras
   sollicitudin, orci nec facilisis vehicula, neque urna porta risus, ut sagittis enim
   velit at orci.
 <span class="warn">consectetuer adipiscing elit</span>.
   Lorem ipsum dolor
   Cras sollicitudin, orconec acilisis vehicula, negue urna porta risus, ut sagittis
   enim velit at orci.
  class="warn">
   Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Cras
   sollicitudin, orci nec facilisis vehicula, neque urna porta risus, ut sagittis enim
   velit at orci.
 </body>
```

 Class names are referenced in css as element.classname

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Cras sollicitudin, orci nec facilisis vehicula, neque urna porta risus, ut sagittis enim velit at orci.

Fusce velit. Integer sapien enim, rhoncus vitae, cursus non, commodo vitae, felis. Nulla convallis ante sit amet urna. Maecenas condimentum hendrerit turpis.

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Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Cras sollicitudin, orci nec facilisis vehicula, neque urna porta risus, ut sagittis enim velit at orci.

```
background-color: white:
  color: black;
  font-family: times;
  margin: 0.5em;
  padding: 0.5em;
p.withstyle
  background-color: olive;
  color: navy;
  font-family: sans-serif;
  margin: 0.5em;
  padding: 0.5em;
p.warn
  background-color: yellow;
  color: red;
  font-weight: bold:
```

- Also can have just .class name
 - Selector now matches any element of the given class

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Cras sollicitudin, orci nec facilisis vehicula, neque urna porta risus, ut sagittis enim velit at orci.

Fusce velit. Integer sapien enim, rhoncus vitae, cursus non, commodo vitae, felis. Nulla convallis ante sit amet urna. Maecenas condimentum hendrerit turpis.

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Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Cras sollicitudin, orci nec facilisis vehicula, neque urna porta risus, ut sagittis enim velit at orci.

```
background-color: white;
 color: black;
 font-family: times;
 margin: 0.5em;
 padding: 0.5em;
.withstyle
 background-color: olive:
 color: navy;
 font-family: sans-serif;
 margin: 0.5em;
 paddina: 0.5em:
.warn
 background-color: yellow;
 color: red:
 font-weight: bold;
```

- You can also use multiple CSS classes on a single element
 - For example, this paragraph has three classes:

```
...
```

Bootstrap example

IDs

- Id attribute provides a unique identifier for an element.
- Must be unique no other element in the same page should have the same id

HTML: element

```
#mainpoint {
CSS: Notice that an id selector starts with a '#'.
font-weight: bold;
}
```

<div>

- Use <div> element as a containers
- Allocate an ID for each <div>
- Apply CSS rules for each div

```
<body>
<div id="maincontent">
     Fusce velit. Integer sapien enim, rhoncus vitae, cursus non,
     commodo vitae, felis. Nulla convallis ante sit amet urna. Maecenas
     condimentum
     hendrerit turpis.
     Fusce velit. Integer sapien enim, rhoncus vitae, cursus non,
     commodo vitae, felis. Nulla convallis ante sit amet urna. Maecenas
     condimentum
     hendrerit turpis.
     Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Cras
     sollicitudin, orci nec facilisis vehicula, neque urna porta risus, ut
     sagittis enim
     velit at orci.
     Lorem ipsum dolor sit amet, span class="warn">consectetuer adipiscing
     elit</span>.
     Cras sollicitudin, orci nec acilisis vehicula, neque urna porta risus, ut
     sagittis
     enim velit at orci.
     /div>
<div id="footer*>
     Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Cras
     sollicitudin, orci nec facilisis vehicula, neque urna porta risus, ut
     sagittis enim
     velit at orci.
     </div>
</body>
```

from CSS file

```
#maincontent
{
   border-style: solid;
   border-width: 2px;
}

#footer
{
   border-style: dashed;
   border-width: 2px;
   border-color: red;
}
```

Fusce velit. Integer sapien enim, rhoncus vitae, cursus non, commodo vitae, felis. Nulla convallis ante sit amet urna. Maecenas condimentum hendrerit turpis.

Fusce velit. Integer sapien enim, rhoncus vitae, cursus non, commodo vitae, felis. Nulla convallis ante sit amet urna. Maecenas condimentum hendrerit turpis.

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Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Cras sollicitudin, orci nec acilisis vehicula, neque urna porta risus, ut sagittis enim velit at orci.

Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Cras sollicitudin, orci nec facilisis vehicula, neque urna porta risus, ut sagittis enim velit at orci.

BOOTSTRAP

CSS Frameworks

A **CSS framework** is a software framework that is meant to allow for easier, more standards-compliant web design using the Cascading Style Sheets language. Most of these frameworks contain at least a grid. More functional frameworks also come with more features and additional JavaScript based functions, but are mostly design oriented and unobtrusive. This differentiates these from functional and full JavaScript frameworks.

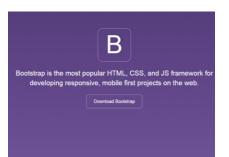
Two notable and widely used examples are Bootstrap and Foundation.

CSS frameworks offer different modules and tools:

- reset style sheet
- · grid especially for responsive web design
- web typography
- set of icons in sprites or icon fonts
- styling for tooltips, buttons, elements of forms
- parts of graphical user interfaces like accordion, tabs, slideshow or modal windows (Lightbox)









	S	Semantic UI
Home	Messages	Friends

What's Bootstrap

- Bootstrap is a free framework for creating web applications.
- It contains HTML and CSS-based design templates for styling text, forms, buttons, navigation
- Also has optional JavaScript extensions.



ntroducing notstrap.

Rootstran? Look no further

Why Bootstrap

- CSS is can be tricky
 - Cross browser/device support can be a challenge (Chrome, Firefox, Internet Explorer, Safari, and Opera)
- "One framework, every device".
- Can theme a page
- Easy to use
 - Anybody with just basic knowledge of HTML and CSS can start using Bootstrap
- Responsive features
 - Bootstrap's responsive CSS adjusts to phones, tablets, and desktops
- Mobile-first approach
 - In Bootstrap 3, mobile-first styles are part of the core framework



Bootstrap from a CDN

- Can include Bootstrap from a Content Delivery Network (CDN).
 - Already present in many other web apps so cached.
 - Served from closest cdn server.
- CDN example: https://www.maxcdn.com/
- Include the following in the head element:

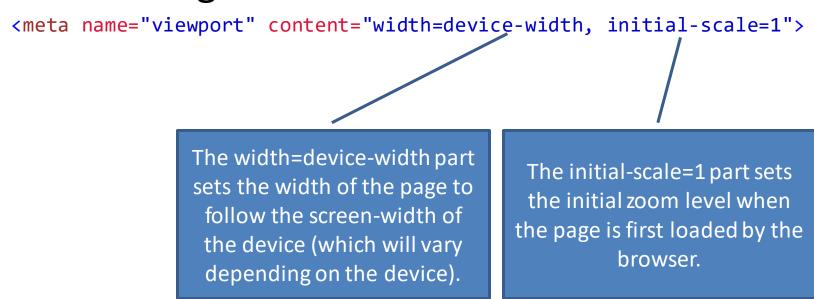
```
<!-- Latest compiled and minified CSS -->
<link rel="stylesheet" href="http://maxcdn.bootstrapcdn.com/boot
strap/3.2.0/css/bootstrap.min.css">

<!-- jQuery library -->
<script src="https://ajax.googleapis.com/ajax/libs/jquery/1.11.1
/jquery.min.js"></script>

<!-- Latest compiled JavaScript -->
<script src="http://maxcdn.bootstrapcdn.com/bootstrap/3.2.0/js/b
ootstrap.min.js"></script></script>
```

Bootstrap is "Mobile First"

- Designed to work on heterogenous mobile, touchscreen devices.
- Use a <meta> tag in the <head> element to ensure proper rendering.



Bootstrap uses Containers

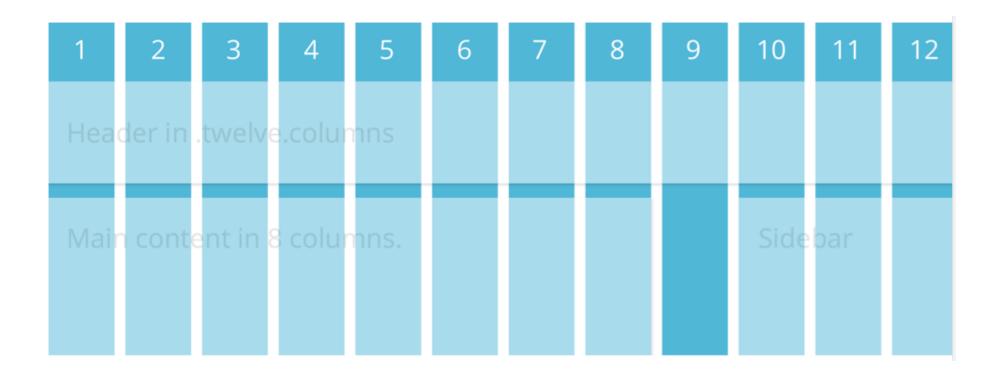
 Bootstrap requires a containing element with a container or container-fluid classifier to wrap site contents.

```
<div class="container">
  <h1>My First Bootstrap Page</h1>
  This is some text.
</div>
```

Bootstrap Grid

- Responsive, fluid grid system that appropriately scales up to 12 columns
- Predefined classes for easy layout options
- Use rows and columns
 - Rows must be placed within a .container class for proper alignment and padding. Create horizontal groups of columns
 - Content should be placed within columns
 - classes like .row and .col-xs-4 are available for quickly making grid layouts

Grids



Grid Configurations

	Extra small devices Phones (<768px)	Small devices Tablets (≥768px)	Medium devices Desktops (≥992px)	Large devices Desktops (≥1200px)
Grid behavior	Horizontal at all times	Collapsed to start, horizontal above breakpoints	Collapsed to start, horizontal above breakpoints	Collapsed to start, horizontal above breakpoints
Max container width	None (auto)	750px	970px	1170px
Class prefix	.col-xs-	.col-sm-	.col-md-	.col-lg-
# of columns	12	12	12	12
Max column width	Auto	60px	78px	95px
Gutter width	30px (15px on each side of a column)	30px (15px on each side of a column)	30px (15px on each side of a column)	30px (15px on each side of a column)
Nestable	Yes	Yes	Yes	Yes
Offsets	Yes	Yes	Yes	Yes
Column ordering	Yes	Yes	Yes	Yes

Basic Grid Structure

Column classes indicate the

number of columns you'd

possible 12 per row. So, if

columns across, you can

you want three equal-width

like to use out of the

use .col-4

Container center and horizontally pad the contents.

Rows are wrappers for columns

In a grid layout, content must be placed within columns and only columns may be immediate children of rows.

Bootstrap Page Header & Jumbotron

```
<!DOCTYPE html>
<html>
<head>
 <meta name="viewport" content="width=device-width, initial-scale=1">
 <title>Bootstrap 101 Template</title>
 k rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/3
 <link rel="stylesheet" href="style1.css">
 <!-- Optional
   theme -->
</head>
<body>
 <div class="container">
    <div class="page-header">
     <h1>Hello World!</h1>
    </div>
    <div class="jumbotron">
     Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut bibendum
       ornare vitae. 
     <a class="btn btn-success btn-lg">More info</a>
    </div>
  </div>
 <!-- jQuery (necessary for Bootstrap's JavaScript plugins) -->
 <script src="https://code.jquery.com/jquery-1.12.4.min.js"></script>
 <!-- Include all compiled plugins (below), or include individual files as n
 <script src="https://stackpath.bootstrapcdn.com/bootstrap/3.4.0/js/bootstra</pre>
</body>
</html>
```

Hello World!

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut bibendum convallis sapien, nec pulvinar nisi ornare vitae.

More info

style1.css

```
.jumbotron {
background-color: blue;
color: white;
}
```

Bootstrap Grid Structure

```
<div class="container">
 <div class="page-header">
   <h1>Hello World!</h1>
                                                                       Specifies how many columns will
 </div>
                                                                           be occupied, depending on
 <div class="row">
                                                                                   screen/pixel size
   <div class="col-lg-3 col-md-3 col-sm-6 col-xs-12">
     <h4>Col 1</h4>
     Proin scelerisque nisl sed vehicula sollicitudin. In at dignissim lectus, ut pulvinar libero. Ut varius, enim
     sed faucibus fermentum, metus nibh volutpat mi, sed blandit dolor lorem at odio.
   </div>
   <div class="col-lg-3 col-md-3 col-sm-6 col-xs-12">
     <h4>Col 2</h4>
     Proin scelerisque nisl sed vehicula sollicitudin. In at dignissim lectus, ut pulvinar libero. Ut varius, enim
     sed faucibus fermentum, metus nibh volutpat mi, sed blandit dolor lorem at odio.
   </div>
   <div class="col-lg-3 col-md-3 col-sm-6 col-xs-12">
     <h4>Col 3</h4>
     Proin scelerisque nisl sed vehicula sollicitudin. In at dignissim lectus, ut pulvinar libero. Ut varius, enim
     sed faucibus fermentum, metus nibh volutpat mi, sed blandit dolor lorem at odio.
   </div>
   <div class="col-lg-3 col-md-3 col-sm-6 col-xs-12">
     <h4>Col 4</h4>
     Proin scelerisque nisl sed vehicula sollicitudin. In at dignissim lectus, ut pulvinar libero. Ut varius, enim
     sed faucibus fermentum, metus nibh volutpat mi, sed blandit dolor lorem at odio.
   </div>
 </div>
</div>
```

col-md-6

Hello World!

Col 1

Proin scelerisque nisl sed vehicula sollicitudin. In at dignissim lectus, ut pulvinar libero. Ut varius, enim sed faucibus fermentum, metus nibh volutpat mi, sed blandit dolor lorem at odio.

Col 3

Proin scelerisque nisl sed vehicula sollicitudin. In at dignissim lectus, ut pulvinar libero. Ut varius, enim sed faucibus fermentum, metus nibh volutpat mi, sed blandit dolor lorem at odio.

Col 2

Proin scelerisque nisl sed vehicula sollicitudin. In at dignissim lectus, ut pulvinar libero. Ut varius, enim sed faucibus fermentum, metus nibh volutpat mi, sed blandit dolor lorem at odio.

Col 4

Proin scelerisque nisl sed vehicula sollicitudin. In at dignissim lectus, ut pulvinar libero. Ut varius, enim sed faucibus fermentum, metus nibh volutpat mi, sed blandit dolor lorem at odio.

col-lg-3

Hello World!

Col 1

Proin scelerisque nisl sed vehicula sollicitudin. In at dignissim lectus, ut pulvinar libero. Ut varius, enim sed volutpat mi, sed blandit dolor lorem at odio.

Col 2

Proin scelerisque nisl sed vehicula sollicitudin. In at dignissim lectus, ut pulvinar libero. Ut varius, enim sed faucibus fermentum, metus nibh faucibus fermentum, metus nibh faucibus fermentum, metus nibh volutpat mi, sed blandit dolor lorem at odio.

Col 3

lorem at odio.

Proin scelerisque nisl sed vehicula sollicitudin. In at dignissim lectus, ut pulvinar libero. Ut varius, enim sed volutpat mi, sed blandit dolor

Col 4

Proin scelerisque nisl sed vehicula sollicitudin. In at dignissim lectus, ut pulvinar libero. Ut varius, enim sed faucibus fermentum, metus nibh volutpat mi, sed blandit dolor lorem at odio.

col-xs-12

Hello World!

Col 1

Proin scelerisque nisl sed vehicula sollicitudin. In at dignissim lectus, ut pulvinar libero. Ut varius, enim sed faucibus fermentum, metus nibh volutpat mi, sed blandit dolor lorem at odio.

Col 2

Proin scelerisque nisl sed vehicula sollicitudin. In at dignissim lectus, ut pulvinar libero. Ut varius, enim sed faucibus fermentum, metus nibh volutpat mi, sed blandit dolor lorem at odio.

Col 3

Proin scelerisque nisl sed vehicula sollicitudin. In at dignissim lectus, ut pulvinar libero. Ut varius, enim sed faucibus fermentum, metus nibh volutpat mi, sed blandit dolor lorem at odio.

Col 4

Proin scelerisque nisl sed vehicula sollicitudin. In at dignissim lectus, ut pulvinar libero. Ut varius, enim sed faucibus fermentum, metus nibh volutpat mi, sed blandit dolor lorem at odio.

Bootstrap Glyphs Example

Bootstrap Table Example



Name	Address	Phone Number		
Frank Walsh	3 Main St.	12344	Delete 🗶	Edit 🖍